REMARKS

The foregoing Preliminary Amendment is requested in order to delete the multiple dependent claims and avoid paying the multiple dependent claims fee.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

Early action on the merits is respectfully requested.

Respectfully submitted,

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Atty. Docket: P63544US1
Date: June 29, 2001
WEP:jrc

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

3. (Amended) A method according to claim 1 [or 2] wherein in step b) numbers of photon counts $\{\mathbf{n}_i\}$ subject to determination of a distribution $\hat{P}(\mathbf{n})$ are derived from numbers of photon counts in primary time intervals $\{\mathbf{N}_j\}$ by summing up numbers of photon counts from primary time intervals according to a predetermined rule.

7. (Amended) A method according to <u>Claim 3</u> [one of the claims 3 to 6] wherein in step b) a set of distributions $\hat{P}(\mathbf{n})$ is determined according to a set of different rules, said set of distributions being fitted jointly in step c).

8. (Amended) A method according to <u>claim 6</u> [claims 6 and 7] wherein in step c) a set of distributions with different values of M and/or L are fitted jointly.

9. (Amended) A method according to <u>claim 1</u> [one of the claims 1 to 8] wherein at least one of the physical quantities of step c) is concentration of particles.

10. (Amended) A method according to <u>claim 1</u> [one of the claims 1 to 9] wherein at least one of the physical quantities of step c) is specific brightness of particles.

11. (Amended) A method according to <u>claim 1</u> [one of the claims 1 to 10], wherein at least one of the physical quantities of step c) is diffusion coefficient.

12. (Amended) A method according to claim 1 [one of the claims 1 to 11] wherein the generating function is calculated using the expression $G(\xi) = \exp[\int dq c(q) \int d^3\mathbf{r}(e^{(\xi-1)qTB(\mathbf{r})} - 1)]$, where $c(q)$ is the density of particles with specific brightness q, T is the length of the counting interval, and $B(\mathbf{r})$ is the spatial brightness profile as a function of coordinates.

13. (Amended) A method according to claim 1 [one of the claims 1 to 12] wherein the argument of the generating function is selected in the form $\xi = e^{-i\varphi}$ and a fast Fourier transform algorithm is used in calculation of the theoretical distribution of the number of photon counts out of its generating function.

14. (Amended) A method according to claim 1 [one of the claims 1 to 13] wherein in step c) when calculating the theoretical distribution $P(\mathbf{n})$, the spatial brightness profile is modelled by a mathematical relationship between volume and spatial brightness.

17. (Amended) A method according to claim 1 [any of the claims 1 to 16] wherein in step a) a confocal optical device is used for monitoring the intensity of fluorescence.

18. (Amended) A method according to claim 1 [any of the claims 1 to 17] wherein said fluorescent molecules or other particles are characterized applying an homogeneous fluorescence assay.

19. (Amended) A method according to claim 1 [any of the claims 1 to 18] for use in diagnostics, high throughput drug screening, optimization of properties of molecules and identification of specific cell or suspendable carrier populations.

20. (Amended) Confocal apparatus for performing the method according to <u>claim 1</u> [any of the claims 1 to 19] comprising:

a radiation source (12) for providing excitation radiation (14),

an objective (22) for focussing the excitation radiation (14) into a measurement volume (26),

a detector (42) for detecting emission radiation (30) that stems from the measurement volume (26), and

an opaque means (44) positioned in the pathway (32) of the emission radiation (30) or excitation radiation (14) for erasing the central part of the emission radiation (30) or excitation radiation (14).